Corona Power Loss Computation In Bundled Bipolar Conductors

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Summary

In this paper, a finite element (FE) based algorithm devoted for the computation of the corona current and hence the corona power loss associated with bundled bipolar high voltage direct current (HVDC) conductors is presented. A pre-requisite for the computation of the corona current is the estimation of the ground plane current density and electric field profiles associated with the HVDC configuration. The effectiveness of the present method is demonstrated using HVDC full scale and laboratory model transmission lines. Comparison between previously measured and computed profiles and present calculations shows satisfactory agreement with previous measured and calculated values